In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A keypad device to be applied in an electrical device, wherein the keypad device comprises:

a keypad module including ~~at least one~~ a plurality of keys and respective output pins of the keys, the keypad module being used for outputting an interrupt signal ~~wherein~~ when at least one of the keys is pressed, ~~the keypad module will output an interrupt signal, receive a drive voltage, and, according to the drive voltage, output~~ and for outputting a parallel signal corresponding to the keys through the output pins when the keypad module receives a drive signal;

a parallel/serial conversion device coupled to the output pins of the keypad module for receiving the parallel signal and outputting a serial signal according to the parallel signal; and

a controller, ~~being~~ coupled to the keypad module and the parallel/serial conversion device respectively, wherein the controller includes an input/output pin, coupled to the keypad module, for ~~receives~~ receiving the interrupt signal and ~~outputs~~ outputting the drive voltage ~~according~~ in response to the interrupt signal, and the controller receives the serial signal and determines the status of the keypad module according to the serial signal received;

wherein the controller, in response to the interrupt signal, sets the input/output pin as an output pin to output the drive voltage to the keypad module to enable the keypad module to output the parallel signal.

2. (Currently Amended) The keypad device according to claim 1, wherein when the controller determines that no key of the keypad module is being pressed according to the serial signal received, the controller ~~comprises an~~ sets the input/output pin which is coupled to the keypad module as an input pin.

3. (Original) The keypad device according to claim 1, wherein the electrical device is a PDA (Personal Digital Assistant).

4. (Canceled)

5. (Currently Amended) A keying input circuit, comprising:

a keypad module including ~~at least one key~~ a plurality of keys and a plurality of respective output pins for the keys, wherein when at least one of the keys is pressed, the keypad module ~~will~~ outputs an interrupt signal and outputs [[a]] module status data in parallel from the output pins, which includes a plurality of key status data ~~and corresponds to the pressed key~~ corresponding to the keys;

a control circuit, electrically connected to the keypad module, ~~and outputs~~ for outputting a drive voltage and a clock signal ~~according to~~ in response to the interrupt signal;

a conversion circuit, being electrically connected to the keypad module and the control circuit respectively ~~and being used for the receiving of the drive voltage and the clock signal, wherein the conversion circuit receives~~ for receiving the key status data in parallel from the

output pins of the keypad module according to the drive voltage and for serially ~~outputs~~ outputting the key status data according to the timing of the clock signal; and

a recognition circuit, ~~being~~ electrically connected to the conversion circuit, ~~wherein the recognition circuit~~ for serially ~~receives~~ receiving the key status data and recognizes which key is pressed ~~the pressed keys~~ according to the key status data.

6. (Original) The keying input circuit according to claim 5, wherein the control circuit and the recognition circuit are installed in a micro-controller.

7. (Original) The keying input circuit according to claim 5, wherein the interrupt signal is at a low-level voltage.

8. (Original) The keying input circuit according to claim 5, wherein the drive voltage is at a high-level voltage.

9. (Currently Amended) The keying input circuit according to claim 5, wherein the module status data includes [[8]] a plurality of bits of key status data which correspond to respective ones of the keys.

10. (Currently Amended) A keypad detecting method used in a keypad input circuit, wherein the keypad input circuit includes at least a keypad module which includes ~~at least one key~~ a plurality of keys and respective output pins of the keys, a conversion circuit, and a microcontroller, the method comprising:

outputting an interrupt signal to the microcontroller ~~a module status data~~ from the keypad module when at least one of the keys is pressed~~, wherein the module status data corresponds to the pressed key while the module status data includes a plurality of key status data~~;

~~parallelly outputting the key status data to the conversion circuit~~ in response to the interrupt signal, enabling the conversion circuit to receive module status data from the keypad module through the output pins in parallel, and enabling the conversion circuit to serially ~~outputting~~ output the key status data ~~from the conversion circuit~~, wherein the module status data includes key status data corresponding to the keys; and

serially ~~outputting~~ receiving the key status data from the conversion circuit by [[to]] the micro-controller and recognizing which key of the keys is pressed ~~the pressed key~~ according to the key status data by the micro-controller.

11. (New) The keypad device according to claim 1, wherein the keypad module further includes a first pin coupled to the input/output pin of the controller, and when at least one of the keys is pressed, the keypad module outputs the interrupt signal to the controller through the first pin.

12. (New) The keypad device according to claim 11, wherein the controller sets the input/output pin as an input pin so that the controller receives the interrupt signal from the keypad module when at least one of the keys is pressed.